

Madison Paper Industries)	Department
Somerset County)	Findings of Fact and Order
Madison, Maine)	Part 70 Air Emission License
A-427-70-B-A)	

After review of the Part 70 License Amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Madison Paper Industries
LICENSE NUMBER	A-427-70-A-I
LICENSE TYPE	Minor Modification to add a grinder
NAICS CODE	322121 Paper Mills
NATURE OF BUSINESS	Mechanical pulp and supercalendered paper production facility
FACILITY LOCATION	Main Street, Madison
DATE OF LICENSE ISSUANCE	July 26, 2005
LICENSE EXPIRATION DATE	September 25, 2008

B. Emission Equipment

The following new emission unit is addressed by this Part 70 License amendment:

Emission Unit ID	Unit Capacity		Unit Type	
Groundwood Process	Existing: 300 tons/day groundwood fiber	Proposed: 360 tons/day groundwood fiber	Existing: 5 grinders, 5 hog shredders, 2 unscreened stock tanks, 2 refiner vents, heat recovery system	Proposed: Addition of a sixth grinder, shredder, and associated equipment

C. Application Classification

The licensing of the additional grinder is classified as a Part 70 Minor Modification based on the emissions from the unit. A minor modification is a modification that results in less than a significant emission increase of all regulated pollutants. The proposed actual emissions will be less than 40 tons/year of Volatile Organic Compounds (VOC) and the license allowed emissions will not increase.

II. MINOR MODIFICATION

A. Description

Madison Paper Industries has proposed to add a sixth grinder to the groundwood mill. The groundwood mill produces pulp from logs using grinders, shredders, and various other equipment. Paper is then produced on paper machine 3 using pulp from both the groundwood mill and pulp purchased from other facilities. The proposed grinder will be similar to the five existing grinders. A pressure shredder, expanded wood handling system, and additional auxiliary equipment (including a Distributed Control System) is also part of the project.

The grinder project is expected to increase the facility's groundwood capacity by 60 tons per day (tpd). However, the additional pulp production will not increase paper production rates since the added groundwood pulp will be used in place of pulp currently purchased. There will be no increase in boiler steam demand since the grinder is driven by electric motors.

B. Best Available Control Technology (BACT)

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Department regulations. BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

The control on the existing groundwood process consists of a heat recovery system. The wood passes through the grinders and then through the shredders. The grinders are enclosed to operate above atmospheric pressure at elevated temperature. After the grinders, the stock, water, steam, and resultant gases go into the unscreened stock tank. The unscreened stock tank periodically vents to the blow seal tank to prevent over pressurization. Groundwood from the unscreened stock tank is screened and further processed into acceptable pulp for papermaking. Unvented gases from the unscreened stock tank continue through a

cyclone where fiber is recovered and returned to the process. Following the cyclone, the flash steam and gases go to a barometric condenser. The condenser both condenses organics utilizing fresh steam and water, and recovers heat from the exhaust gases. Materials which do not condense (ie. excess flash steam) are vented to the atmosphere after passing through a secondary condenser.

Test Results

Madison Paper Industries performed tests on the existing grinders in 1996 as part of the facility's VOC RACT (Reasonable Available Control Technology) analysis. For the proposed addition of a sixth grinder, the Department requested additional VOC testing be performed.

VOC testing was conducted on February 17, 2005 using EPA Method 25A on an "as carbon" basis. The VOC concentration from the grinder was 6849 ppm when the blow seal tank vent was open to the atmosphere and 461 ppm with the blow seal tank vent closed. It should be noted that the 6849 ppm number is similar to the 6000 ppm result during the 1994 test. A flow rate could not be accurately obtained for the grinder due to the very low flow, so 1/2 the lowest measurable pressure differential for the manometer was used. During the February 2005 test, the refiner vent was 587 ppm. In the 1996 test it was 150 ppm.

Assuming the current five grinder operation, 24 hours a day, and 365 days a year, total potential VOC emissions are approximately 14.9 tons/year, as calculated from the following:

Feb. 2005 test:

$$[(0.5 \text{ lb/hr average from refiner vent} + 2.9 \text{ lb/hr from blow seal tank, opened})(8760 \text{ hr/year})]/2000 \text{ lb/ton} = 14.9 \text{ ton/year}$$

This is a conservative estimate since the facility normally operates maintaining a water level in the grinder blow seal tank which further reduces emissions from the process. Using the maximum achievable annual production for the five grinders and the 14.9 tons/year potential VOC emissions, an associated VOC emission release of 0.26 lb/ton was calculated. The proposed sixth grinder will add 60 tons of pulp production per day which equates to approximately 2.8 tons VOC/year.

Department Approval

The Department approves the addition of a sixth grinder in the groundwood process since total VOC emissions from all six grinders is estimated to be 17.7 ton/year. This is below the 39 ton/year VOC limit in Madison's air emission license (A-427-70-A-I). BACT for the sixth grinder shall be installation into the current heat recovery system.

Condition (20) in air emission license A-427-70-A-I shall continue to apply to the groundwood process:

- (20) Madison Paper Industries shall maintain records on a twelve-month rolling basis to document that VOC emissions are under 39 tons/year. Madison Paper Industries shall submit a license amendment to the Department if the ground wood operations are modified in a way that VOC emissions are increased above 39 tons/year. [MEDEP Chapter 140, BPT] **(Enforceable by State-only)**

C. Facility Licensed Emissions

Facility licensed emissions were calculated based on an annual fuel limit of 11,000,000 gallons per year (12 month rolling total) of fuel oil, an annual sulfur dioxide limit of 1276 tons/year for the boilers, and use of the groundwood mill. Facility licensed emission are not changing with this license amendment.

Total Allowable Annual Emissions for the Facility (used to calculate the license fee)

EMISSION UNIT	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers 4, 6, and 7	135	135	1276	371	100	8
Groundwood Process	-	-	-	-	-	39
TOTALS	135	135	1276	371	100	47

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that emissions from this sources:

- will receive Best Practical Treatment;
- will not violate applicable emissions standards
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants the Part 70 Minor Modification A-427-70-B-A pursuant to MEDEP Chapter 140 and the preconstruction permitting requirements of MEDEP Chapter 115 and subject to the standard and special conditions below.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in Chapter 115 for making such changes and pursuant to the applicable requirements in Chapter 140.

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For each standard and special condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only.**

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIAL CONDITIONS

(38) Additional Grinder

Madison Paper Industries may install a sixth grinder to the facility's groundwood operation. The grinder shall be installed to utilize the current heat recovery system. Condition (20) of air emission license A-427-70-A-I, including recordkeeping and the annual VOC emission limit, shall continue to apply to the groundwood process. [MEDEP Chapter 140, BACT].

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAWN R. GALLAGHER, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-427-70-A-I.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 28, 2005

Date of application acceptance: April 28, 2005

Date filed with the Board of Environmental Protection _____

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.